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Nico Spronk* (nspronk@uwaterloo.ca), 200 University Ave. W., Waterloo, Ontario N2L3G1, Canada. *Beurling-Fourier algebras of compact groups.*

Let G be a compact group. I will introduce a class of p -Beurling-Fourier algebras $A_\omega^p(G)$ where $1 \leq p \leq \infty$, and $\omega : \widehat{G} \rightarrow \mathbb{R}^{>0}$ is a weight function. If $p = 1$ and $\omega = 1$ is the constant weight, then this algebra is the classical Fourier algebra $A(G)$. If G is abelian then for any p , $A_\omega^p(G) = \ell^1(\widehat{G}, \omega)$ is a classical Beurling algebra.

I will survey a some results on these algebras. J. Ludwig, L. Turowska and I have obtained results on the Gelfand spectrum, as well as results on regularity and sets of spectral synthesis. H.H. Lee, E. Samei and I have obtained results on when $A_\omega^p(G)$ is an operator algebra. I will discuss future directions for these ideas. (Received September 14, 2010)